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ORIGINAL ARTICLES.

ANNUAL REPORT OF THE DEPARTMENT OF HEALTH OF BROOKLYN.

By Professor L. McLean, M.R.C.V.S., Veterinary Inspector.

DEPARTMENT OF HEALTH,
BROOKLYN, December 26, 1883.

J. H. Raymond, M.D., Commissioner Department of Health:

SIR—In this, my annual report as Veterinary Inspector to your Board, I beg to particularly draw attention to the continued and increasing prevalance of contagious pleuro-pneumonia amongst the milch cows of the city and the immediate surrounding district, with the hope that you may be able to bring some concentrated action to bear to stamp out a disease that is financially ruining those who are locally engaged in the trade, supplying our families with unwholesome milk, and many of our butcher shops with beef, if not directly dangerous, certainly in the highest degree non-nutritious.

My official capacity as Veterinary Inspector to your Board during a number of years, and my active connection with the commission appointed by Governor Robinson in 1879, under General Patrick, enables me to speak with a practical knowledge of the actual state of matters down to date; and I consider that it may be safely stated that there is in the Union no other city of the same extent, in which the milk-producing stock is so extensively affected with contagious pleuro-pneumonia.

The introduction and history of this disease in Brooklyn may be briefly stated as follows:

Peter Dunn, who, in 1843, kept a cow stable in the vicinity of what is now Hamilton Ferry, purchased a cow off a vessel arriving from some port in Holland. This animal shortly afterward developed contagious pleuro-pneumonia and died, infecting the other cows in the stable. He, becoming alarmed at the mortality among his stock, disposed of the balance as best he could.

We next hear of it as almost decimating some of the distillery stables in this city, and from this focus it has spread over almost every section of this island. Indeed, from this, comparatively speaking, germ can be traced the origin of contagions pleuro-pneumonia in the United States.

In this neighborhood the disease continued to spread, no official action having been taken to check its progress, until Governor Robinson's attention was drawn to its prevalence in this city in general, and the Blissville districts in particular, in a communication from you, as Sanitary Superintendent of the Brooklyn Board of Health, in January, 1879, the result being the appointment of a commission, of which General Patrick was the head, with Prof. Law, of Cornell University, as its veterinary adviser.

Upon investigation by this commission, the identity of the prevailing disease with contagious pleuro-pneumonia was satisfactorily established, and many proofs of its widespread existence obtained. The policy adopted by them was that of slaughtering the affected animals, quarantining and disinfecting the stables in which affected cases were found, and strictly prohibiting the system of inoculation.

In carrying out these measures, thousands of dollars were expended and many animals destroyed during the three years existence of the commission, with only directly negative results, in so far as the permanent control of contagious pleuro-pneumonia in Brooklyn was obtained.

Considering the lengthened and tenacious hold this disease has secured in this district, and the exceptional local conditions, along with the indefinite latent period of contagious pleuro-pneumonia, no other result could have been anticipated from such a course.

There are, sir, about 5,000 head of milch cows contained in about 450 stables, within and just outside the limits of this city. Ten per cent. of the former are affected in one or other of the various stages of this disease, and at least eighty per cent. of the stables are of themselves permanent centers of contagion, and that beyond the control of disinfectants.

The experience of foreign countries, and the recent investigations of so-called contagious pleuro-pneumonia, as well as other contagious bovine diseases, have fortified the hands of sanitarians in their efforts to control their spread, and have enabled them to view their importance and ætiology in a clearer light.

I consider that the term contagious pleuro-pneumonia, in its application to this disease, is a misnomer, and that its character would be more intelligently comprehended in defining it as a zymotic bovine lung-fever, the fever being the disease and the pulmonary complications the sympathetic features. In my opinion, there are three distinct periods in its progress—viz: the latent, incubative, and special appointing—and by giving due consideration to these three stages, you can better comprehend the necessity of careful measures in effectually dealing with this pest. During the first of these stages, as the name implies, the germ may be lying latent in the system, and this for an indefinite period, ranging from four days to four months, during which the most critical examination will fail to detect in the animal anything abnormal. The second or incubative period is characterized by the presence of general febrile symptoms, while the third stage exhibits the pathognomonic pulmonary lesions. That due weight has not been given to the often protracted first or latent period, and to the tenacious vitality of its germ, must be ascribed the non-success of many of the efforts hitherto in vogue, while attempting to eradicate the disease both here and in other countries.

As to remedial measures. Experience has taught us that there are but two courses which can be taken in meeting or controlling this scourge—viz: the slaughtering process, and that of inoculation—and the relative merits of these different measures, in their applicability to Brooklyn, can be briefly stated as follows:

Taking the latent period of the disease into consideration, it

will be at once apparent that, if the slaughtering process is to be adopted, not only must the acutely affected animals be destroyed but also all those who have cohabited with them, and *that, on the premises they occupy ;* but further, we find that a majority of the cow stables in this city are frame buildings, having wooden floors, many in a decayed condition, which, with the surface soil, have become thoroughly saturated with the germs of the disease; hence they are beyond the power of disinfection, and to thoroughly stamp out the disease by this process would necessarily entail the entire destruction of the various stables as well as their occupants.

So many of these stables being known centres of contagion, who is prepared to pay this enormous outlay? As I consider that, in this city anything short of this would be a waste of money, especially seeing that it would at the same time completely paralyze this branch of business. In every place where the disease has obtained such a stronghold, and the centres of contagion are so numerous as here, the slaughtering process has proved a practical failure.

The second course left to you, that of inoculation, has, for at least eighteen years, been practiced in a rude form by the individual cow owners of this city, and I believe with results satisfactory to them. Inoculation, although surrounded with many difficulties and some objections, is now admitted to be an effectual prophylactic measure, and is advocated by such men as Fleming of England, Willems of Belgium, Mitchell of Australia, and Law of Cornell University. And its practical benefits have been proved beyond a doubt by Rutherford of Edinburgh, who has in that city, during the last few years, successfully operated upon upwards of 4,000 milk cows, and thus, after the slaughtering process had proved a failure, has succeeded virtually in clearing the Scotch metropolis of this pest, that had defied all other efforts for thirty years. It would seem to me that where the disease has existed so long as it has in this city, that this course is much the preferable one, not only from a scientific point of view, but also from that of economy. Our own experience as shown by my report to you in October, substantiates this assertion, and I have since then inoculated a considerable number with equally

satisfactory results. All my subjects were in highly contaminated premises, and none of them, although still occupying the same, have shown any symptoms of contracting the disease, although in several instances where fresh cows were introduced, and not protected by inoculation contagious pleuro-penumonia has been contracted and the animals have died.

But to derive the full benefits of the principle it must be made obligatory and systematic, many of its details requiring to be scrupulously attended to. So far, under your instructions, my efforts have been devoted to establishing the efficacy of the principle, and have been hampered by the limited authority of your Board. In this consideration of inoculation, as stated above, I have viewed the subject as a matter affecting this local district which, from its geographical position, presents the elements for almost perfect isolation and quarantine, and the exportation of live cattle from this island being almost nil, even its entire prohibition, if necessary, would entail no serious loss. Seeing that much of the milk supply of this city is derived from dairies situated immediately beyond the limits of your jurisdiction, such as in Blissville, Ridgewood, East New York, Flatlands and Flatbush, and which are known to be districts highly infected with zymotic bovine lung fever, it will be necessary to at least bring them under the same strict supervision that is being given to the stables located in Brooklyn.

The eradication of the disease in the United States would demand the action not only of local authorities or even of State boards, but also the energetic efforts and supervision of the national government. And while I thus advocate the adoption of inoculation to meet *our* local condition, in recently invaded districts and isolated cases, its extirpation can be more radically effected by the slaughtering process carried out in its entirety.

In support of the above views allow me to quote from an article by George Fleming, LL.D., F.R.C.V.S., of London, a sanitary veterinarian second to none, who says: "There is at length a prospect of release from the ravages of one of the most serious scourges that ever visited the bovine population of this or any other country, if the government cares to adopt those measures which have now been proved to be completely efficacious

in extinguishing it. Contagious pleuro-pneumonia still lingers in these islands, and will continue to do so in all probability until the end of time, unless its insidious contagiousness and protracted latency are fully recognized, and the utility of inoculation as a protective measure fairly acknowledged and resorted to when necessary. The mere slaughter and isolation of diseased centres for a short time, as is at present carried out, will not extinguish the scourge. The evidence in support of protective inoculation is now too serious to be sneered down, or made the sport of small witlings who joke about 'pleuro-pneumonia in the tail.' It is curious that while certain authorities have done their utmost to discredit inoculation, they have never attempted to explain, if they understood, its phenomena. There can be no doubt that when properly performed, and when all due care is exercised, it is as protective, if no more so, than vaccination is of human variola; that the morbid process set up as the result of inoculation is specific, and is not witnessed, so far as we can ascertain, in any other than the bovine species, and that the entire organism appears to be affected.

"This pitiless and continued slaughter of diseased cows, and the terrible embarrassment to agriculturalists which the present fruitless measures produce, will soon become little short of a crime, in presence of the absolute immunity and humanity which are the attributes of protective inoculation."

ALUMNI ASSOCIATION OF THE A. V. C.—ITS HISTORY.

By W. H. Hoskins, D.V.S.

A Paper read at the Alumni meeting, February, 1884.

Continued from page 120.

Passing on to a finer subdivision, one from among our number is now officiating as Milk Inspector for a large district, and to his zealous labors a large body of the people of the second city of the Union have much for which to be thankful, for from his reports I garner a large and varied number of methods of adulterating and doctoring milk, some of which are highly injurious to our diminutive population, and instead of giving health and

strength, tend to deteriorate and break down their and our physical structure. The numbers filling these positions should be largely increased in and contiguous to our large cities, and from no class could they secure more able men than from the true veterinary profession. Another now fills the position of Meat Inspector, and I am sure but a few years will elapse when the history of this Association will count scores of her men filling similar positions. I need not dwell on its importance, for it is an hourly question with almost every living being on the face of earth. When it becomes a position to be doled out by a partisan master, it alike becomes a position of a mercenary character, and bribery and corruption soon rob it of its value to the people. This is why it belongs within the limits of our domain, for few men with a professional reputation at stake would stoop to such degrading influences.

One of our alumni fills a position as veterinary surgeon to the police department in one of our large cities. While the scope of his usefulness may be limited, still in time it will prove a necessity, and it marks a broader recognition of the profession that is gratifying to behold.

The large number of monied men now turning their attention to stock-growing in our western prairie lands is destined to become one of the most gigantic interests of this great country, and where such large interests are at stake much precaution will be taken to preserve and foster them. In this light, two from within our walls have been called; one in a short season has brought back to us the most remarkable volumn of statistics as to the value, methods, dangers, complications, etc., of the operation of ovariotomy, that is now extant in this country. He proved beyond doubt that the operation through the flank is not the best; that through the vagina was the quickest performed, and greatly added in a shorter time to the value of the animal in market, which of course is the prime question in the cattle-growing business. The dangers of contagious and infectious disease in such avocations are highly important, and the work of one competent surgeon, among such large numbers of animals, would prove in such times of incalculable value, and the need grows larger each day. These posi-

tions that I have refered to, with one or two others that I shall speak of hereafter, are largely based upon the practical side of our profession, and from no school in or out of America have so many practical men marched forth as from our alma mater. It is then with no feeling of distrust that I urge you to agitate and necessitate among your people the importance of these positions, and to be continually drilling yourselves to the point of being able to fill them. Great has been the progress of the profession under our National Government, which, until a few years ago, allowed almost anyone who styled himself a veterinary surgeon to hold such a position; but this has changed, and while the compensation is yet too small, and the promise of rank unattractive, only graduates of recognized colleges can now fill these positions; but their condition has been bettered, and the outlook is much brighter. Good and efficient instruments are now furnished, and the category of drugs now includes almost all that are requisite in the advanced condition of our science. To the Department of Missouri one of our most trusted fellow-graduates has been called, and from his frequent and valuable contributions to the REVIEW we are fully assured that he is serving his profession well, and from him we can look for much advancement; also for suggestions by which we as a body of the profession may exert our influence in the betterment of the condition of army veterinary surgeons. Two others of our alumni have entered the United States Cavalry, and followed for a time the ofttimes monotonous routine of a life under such conditions. From one I have received a long letter deploring the associations that are offered the veterinarian in the army, and sadly referring to the boasted qualifications of former surgeons in his regiment. He says there is but little to do, for the so-called farrier in each company suits his own pleasure as to when he needs your assistance, and from thus being burdened with a large amount of idle time, the degrading vices of drinking and gambling have won many whose early professional life promised a good and bright career; this has arisen in great part from the fact that those whom you are ranked with have these accomplishments as their aim. A better rank would alter this and make such positions an honor to hold, and to the

accomplishments of this I trust that each member will give his earnest support.

In many States we find our members working hard in their efforts to rear up State Associations, through which they are hoping to secure legislation, to have the profession work as a unit for any good step forward, and at the same time to promote better fraternal feelings by mingling together their ideas and experiences and thus enhance the practical value of each individual member. In the associations formed about one year ago in several States, many are found laboring earnestly, while others have found it necessary to form other associations, that shall count in their membership only those who are graduates of recognized colleges. I shall not enter here into the discussion of the wisdom of such movements, for brevity would not permit a just consideration of the question. In the States of New York, Pennsylvania and Iowa, such associations are now at work, while New Jersey will soon move to the fore in the same direction. This I do know, that our men have accomplished much good by such work, and none have been more zealous and faithful. In my own State vicious legislation has been defeated, wise legislation agitated, medical schools have been led to recognise our graduates, and many of the boldest forms of empiricism stamped out; while to the individual members much good feeling has been aroused among them, and from discussions and reading of papers much more efficient work emanated. We have made our meetings worth coming to, and can boast of a larger percentage in attendance than any other now in existence. This I believe to be one of the best methods of professional advancement, and I would urge every member to identify himself with such movements as long as they are maintained within the limits of a just propriety and true methods of labor.

A few of our number have found time, at a great sacrifice, to become graduates in human medicine, which is a step to be very much encouraged, for it has a two-fold advantage in that it will make one a better practitioner and that it will allow you to mingle with the medical profession, in their societies, etc. To the medical profession we owe much, for from among their number we have had some very zealous workers in our college. From

them we can gain much more, and their recognition and support will often lead you in a short time where years of zealous labor would otherwise have been required. Through this medium we gain an entrance to their associations and are enabled to encourage a heartier support in our steps of advancement, and profit by their discussions as well as to furnish them with many valuable points in public questions of medical hygiene, etc.

From position to position I have now led you hurriedly, with the hope of not tiring your patience, but to the topmost round I now lead you, as I present to you the facts that no less than six of our men have been called to fill professorships in prominent colleges and schools throughout our country. To our own alma mater four have returned, and, be it said for them, that few have bade farewell to their teachings but what felt that they were worthy of the honors conferred upon them, and filled their positions with ability and power. To other schools some three have gone, and their sphere of usefulness has served many good ends, and ofttimes brought into the profession good and valuable workers. These honors have been the reward of true merit, and the efficiency of the schools has been largely increased by their presence. Their future work is full of promise and to such seats of learning will be drawn only young men of ability and power, and thus a double movement forward in our progress is given. With one, and from my own class, of which I am proud, the call has been to one of the most learned colleges of the world, and his hours of labor in his calling will be among the richest and broadest minds our country possesses. Naturally from these must emanate efficient laborers, and our hearts can rejoice that it is in part one of the fruits of our Alumni Association.

While all this has been achieved and is now recorded, the future has a greater work for us to perform, and it would seem fitting here to counsel my fellow-members for a few moments. Remember that it is personal work that is going to collectively make the vast strides forward that are to make the years of our professional history, and none are more able to perform this labor than you and I, fellow graduates. The first and great point you must watch and foster is your time, for it flieth quickly, and while

the great majority of you are young, ambitious, strong and untrammeled, you must labor with unceasing ardor, for, I tell you, were you to give half the earnest labor to your work that we give to idle and fruitless hopes and contemplations, the sum of our labors would be greatly enlarged. *Economy of time* is the great problem for us all, for he who well plans the seasons of labor has much time for recreation and true enjoyment, and strongly would I have you remember that a portion of your times belongs to the work of your college parent; do not forget her interests, serve them in every way, have your people know of your school, watch the progress of your fellow acquaintances, and when one leans toward the profession as a calling, see for him that he starts right, and when another turns toward it who is unfitted for its labors, try and turn his attention away from it, for I assure you we have too much dead wood already. Examine yourselves daily in what way you are particularly adapted for leading parts of the work and not what you would best like or which seems the nicest. If it is in physiological work, draw around you all the means for pursuing it in a thorough manner; if it is in the line of original researches of therapeutics, give a good portion of your time persistently to it; if it is in the solving of the many doubts and uncertainties of our contagious diseases, seek every opportunity of enlarging your knowledge in that direction, for in this field there is the widest room for practical knowledge and experimentation; if the work is the enlarging of veterinary intelligence and general history, identify yourselves with all movements and associates that shall make you and us more powerful and useful, and the sum total of a year's labor will be ten years progress of our noble calling.

Again I say, daily compute your time, and the more you do the more you will find yourselves able to do. Few men ever suffer from too great an amount of brain-work. It is the transgressing of the laws of nature in the manner and mode of their work, that breaks them down physically.

Another great danger peculiarly prevalent among professional men is the tendency to become narrow in one's ideas and work, so that too few men of our day can see beyond their own horizon. Extend your knowledge in every way, broaden your ideas and in-

crease your power and influence in every good and earnest way. In your town, city, county and State give your influence and support to all good movements, and thus identify yourselves with their interests, and you will find they will associate theirs with yours. Keep yourselves alive to the public questions of the day, and when you may be called upon to solve some important question or case for your people's interest, you will increase your value as men and bring supporters to your calling, who would otherwise have been indifferent to your appeals for recognition. It is appalling when I contemplate that the second city of the Union has not to my knowledge ever called one of our men to any public position of honor, trust or emolument, and I venture to say this is true of many other localities.

Before concluding, I may say that the hand of death has not been idle among us, but from our members she has called no less than six; three from the class of '76; one from the class of '79; and two from that of '80. Our loss in this respect cannot be measured, for among them were some whose love and devotion for their chosen calling could hardly have been greater or more devout. Of the class of '80 we find our kind friend Cowhey, who, first in his class at the close of his college career, from the most indefatigable labors, which cost him much, for the early warnings of that deceitful disease were then announcing themselves, but so closely and longingly did he contemplate the value of increasing his knowledge that he remained at the wheel until the last wave had passed over his head, that bespoke the utter destruction of the craft he had launched into our profession, and that which to us all seemed to proclaim a bright and successful career was cut down in its infancy, and our hearts must to-day mourn such a loss, and look upon blank pages in our history that once seemed destined to be filled with a grand and good history. Another of that same class, our fellow-graduate Wing, seemed destined to be a victim to one of the dangers of his calling. From an injury in the pursuit of his daily labors, he was suddenly stricken down with a fatal malady that soon spent its course, and another of our young and promising members was removed from our midst. At college he was not the brightest of his class, but his studies were

always pursued with an earnestness and persistency that followed him in his career as a practitioner, and which were making for him a large practice and much credit for his ability in the field of his labors. Of the others personally I can say but little, save that they all were in the enjoyment of good practices and daily increasing their sphere of usefulness, when that awful and final summons called them from this world, and left to us the sad duty of recording an unfinished page in our history, and but a partially completed professional career.

INOCULATION OF BACILLAR PHTHISIS.

(Extracts from Mr. G. See on Phthisis Pulmonalis.)

The true, direct, efficacious cause of the tuberculous process is resumed, in a single word only: the *bacillus.*

Histology gave no answer to the question of the nature of tubercle, and could neither establish the precise characters of the perituberculous inflammatory nature, nor distinguish the true tubercle from those common inflammatory products known to-day as pseudo-nodules. The powerful intervention of experimental pathology was necessary to terminate these byzantinal discussions upon the connections of the tubercles with the phlegmasia. It will demonstrate conclusively that phlegmasias, so called, perituberculous, are entirely of the domain and even of the nature of phthisis; it will prove, besides, that the tuberculous nodule, notwithstanding its close resemblance to the false tubercle, presents an unalterable, though at the same time characteristic, property. This is the transmissibility; it is the inoculability, after two or three generations, by successive cultures. How has experimental pathology proceeded to reach these positive results? It has simply to reproduce the disease, entirely, and under all its forms. To reach this it has introduced into the organism of the superior animals, through their various roads of absorption, tuberculous matter, or rather the parasite which produces its virulency.

The processes of experimentation consist precisely in introducing the tuberculous substance; 1st, by an insertion of

virus under the skin, in the serous membrane, in the anterior chamber of the eye; 2d, through the artificial and forced use of food coming from the tissues of the phthisical man or of tuberculous animals. Among these aliments, that which interests us most is the milk obtained from tuberculous cows, or from animals affected with tuberculous phthisis. 3d. The third mode of producing experimental absorption consists in breathing the contaminated air expired by sick beings, or, again, the air that has passed over tuberculous products, among which are dried and pulverized sputa. So far we have in view only the inoculated tuberculosis, which is yet, very fortunately, entirely experimental, the fact of the disease being contracted by inoculation not having been demonstrated in man.

Tuberculosis was inoculated some twenty years ago by Villemin; it is to him that belongs, notwithstanding a few very imperfect anterior attempts, the honor of having produced, by inoculation, the disease in animals, and demonstrating in this way the morbid proofs, and proved its specificity and its virulency.

Conditions of the Experimentation.—Several conditions are necessarily indispensable for the success of the operation, and it is because they have been overlooked or intentionally neglected that for so long a time numerous deceptions and unjust suspicions were entertained. 1st. The substances for inoculation must be not only tuberculous, but baccilliferous, and free from any septic microphyte. 2d. The animal experimented upon must not be refractory to tuberculosis. 3d. The inoculation must be performed on organs or tissues which are not specially susceptible to excessive inflammatory action.

I.—Bacilliferous Substances.—A point in discussion was, whether it was necessary to employ, preferably, miliary granulations, or the tubercle, or the caseous, or the so-called caseous pneumonia, which was first suspected of being inefficacious. Successes were obtained with all these diverse products, which are all phthisiogenous, because they contain the bacillus. Without this agent, which is the virulency itself, any attempt to inoculate would fail. It is for this reason that one may as well inject the so called scrofulous matter of bones, of glands, or the tubercle of

the genital organs. It is for this reason, also, that it is sufficient to know which are the tissues or the liquids which are bacilliferous, in order to utilize them; and it is demonstrated that the bacillus occupies in the tubercles, whether its origin be local or general, the parts in a state of softening, and in the nodules themselves, the central part of the neoplasm, the giant cells. Among the liquids, one must never depend on the blood, the urine or excreted substances; the pathological secretions of the mucous, the muco-pus of the products of expectoration are those which possess the maximum of virulency.

Fresh Bacilliferous Substances.—With the exception of the sputa, which keep their virulency for months, the matters used must be fresh; and consequently the tuberculous remains of man cannot be used, on account of late post-mortem changes. Natural or artificial tuberculous animals ought not, and cannot, furnish substances of inoculation, except when fresh killed. Putrid matters give rise either to putrid septicemia or are powerless. These precautions that Villemin recommended, without being able to explain, have for good reason the biological history of microphytes. We have learned two important facts; by contact with matter in putrefaction the bacillar microbes often lose their virulent power. This explains the failure of inoculations by mixed matter. And again, the injection of putrid matters killed animals by septicemia and failed to develop tuberculosis.

II.—Animals susceptible of Tuberculosis or refractory.—The choice of animals to render tuberculous is also a point of great importance. We know, to-day, which animals ordinarily take phthisis and die from it, and also which are refractory. The guinea-pig is easily infected and still more easily inoculated; the rabbit is the predestined victim of the bacilloses, whether developed spontaneously by contagion or communicated by the physiologist. It was even accused of becoming phthisicy too easily (par complaisance), but it is not so; Libert did not discover in it the so-called *spontaneous* tuberculosis; and Raymond, out of 300 autopsies, had often found verminous cysts, but found only five cases of tuberculosis. Dogs are seldom tuberculous; inoculations by Bollinger and Klebs have not proven less successful. The

cat, no more phthisic than the dog, has been successfully treated by Chauveau and Toussaint. And lastly, if, like Krishaber and Dieulafoy, one chooses the animal whose constitution, physiological and morbid, resembles most that of man, which is the monkey, it is easily rendered tuberculous, even in the most perfect condition of health.

DEVELOPMENT OF THE INOCULATED TUBERCULOSIS.

1st. *Tuberculizing effects of inoculations.*—Inoculation is practiced in the subcutaneous cellular tissue, in the peritoneum, or in the anterior chamber of the eye. This last method is the neatest and the surest. The inoculation is performed with a fine lancet charged with an almost microscopic tuberculous fragment, or with a Pravaz syringe filled with a dilution of tuberculous matter, or of sputa. Here is what one observed, especially when done in the peritoneum, where the infection takes place most rapidly:

Local Tuberculosis. — A few days after inoculation a local trouble takes place, which does not interfere with general health.

Generalized Tuberculosis.—Then, after a varying length of time, the animal becomes weak, becomes marasmic, and dies after a colliquative diarrhœa, as all phthisics do. At the post-mortem—one observes—besides the local tubercle, already caseous in its nature, small miliary granulations appeared all round the inoculated points. The tuberculous swelling of the glands, and more or less caseiform granulations in the lungs, the intestines, the liver, the spleen, the kidneys and the peritoneum; this is general tuberculosis.

Inoculability of Artificial Tubercles.—Tuberculosis thus produced is the true, the bacillar kind, as it can easily be inoculated to animals both of the same or of different species, and with certainty during several generations or successive series.

II.—Counter-proofs and Objections.—The true character of this experiment has been denied by some; formal objection has been made, stating that these were merely simple inflammatory nodules, whose appearance simulated tubercles, but whose mode of production was not specific.

Effects of Inert Substances.—Indeed, instead of tuberculous or caseous matter, by comparison, inert substances, charpie, tissue-paper or fragments of cancer were introduced in the peritoneum. The pus of an abscess, fine powder were injected in the veins, and in all these cases, besides local granulations, generalized tuberculoid alterations were obtained. The subcutaneous insertion produced the same effects. In introducing an irritating liquid, like croton oil, or an irritating powder, in the cellular tissue, anatomic processes have been observed, resembling those of tuberculosis; this liquid can even be seen in the giant cells which appear in those inflammatory nodules; and again, by using colored liquids, this can be found in the giant cells.

It seems, then, that tubercle does not act as a virus, but as an ordinary irritant, and that the neoplasm resulting from it resembles all tuberculoids obtained from irritating foreign substances. This is evident in an anatomical point of view, by considering the pathological properties of these products—it is no more than this.

Specific Effects of Tuberculous Substances.—The interesting experiments of Mr. Toussaint, and especially those of Mr. H. Martin, have solved the difficulty in a positive manner: "Tuberculous matter," says the physiologist, "produces after incubation the formation of a local tubercle, to which succeeds a generalized tuberculosis." If one inoculates, on the contrary, the matter extracted from the nodules following the injection of foreign substances, it *never* gives rise to a general tuberculosis; it even loses, after the second term of the series, the property of producing a local inflammation. It is, then, the series of the inoculabilities that characterizes the true tubercle; the specificity of the tubercle is thus demonstrated, notwithstanding its anatomic similitude to common irritation; that tuberculous nodules offer the characters of an inflammatory lesion, it imports little; they have their pathognomonic properties in the point of view of their origin and of their serial reproduction.

(*To be continued.*)

FISTULA OF THE COLON FOLLOWING ENTEROTOMY.

By H. F. James, V.S., St. Louis, Mo.

The occurrence of fistulæ of the rumen in cattle from the use of the trocar or accidental injury, has been observed somewhat frequently; but although enterotomy is performed to a considerable extent on horses in this country, this sequel of the operation, as far as I am aware, has not yet been recorded.

About the middle of January I had a bad case of acute indigestion complicated with congestion of the brain. Performed enterotomy four times on this animal, twice through right flank and twice through the left; by so doing saving my patient from asphyxia. The operation was performed as carefully as was my wont, the trocar was clean and of right calibre and sharpness, and no harm was noticed for some time from the punctures. On recovering from the first sickness, the animal was seized with pneumonia of right lung, and about the eighth or ninth day of the pulmonary complication I was called one night by the watchman and found my patient apparently badly colicked. This suddenly ceased, and I perceived a white colored stream the thickness of my finger running down the right flank from one of the punctures, a fæcal odor becoming very apparent at the same time. The mare was too sick from the lung trouble to stand any irritation at the time, or I would have blistered all around the opening, as we do in salivary fistula, and endeavored to close at once. That it was chyle was very evident, and external manipulation together with probing convinced me that there was no pocket in the abdominal muscles, but that the fistula communicated directly with the bowel. The angle of the puncture, with the flank now in its normal position, was downwards at about 45°, and the fistula was about six or seven inches to the bowel; therefore the chyle, which ran in a continuous stream after the animal had been fed, and saturated both blankets and bedding, had to well up, as I may express it, and the natural tendency of such a channel to heal up quickly seemed in every way likely to me. The mare rapidly regained her usual health and spirits, and in

spite of the loss of chyle began to lay on flesh. Blistered around the opening with the idea of causing enough swelling to close it; budded with hot iron three times, blistering on top of that; tried Squib's flexible collodion to close opening, which had closed considerably since the blistering, &c., but still persisted; not the slightest good. Applied adhesive plaster, same result; silver wire deeply through the edges, with no success. Before each fresh measure was tried I scarified the walls of the fistulous tract as deeply as possible until the blood was drawn, to expose a granulating surface. The patient had now been laid off work for nearly three months, and after these various fruitless attempts, I made up my mind to make a deep incised wound, and trust to an obliteration of the upper part of the tract in the resultant granulation. To run the risk of rupture by laying the fistula open to the bowel was too rash a procedure for any one to undertake, especially as its course through the muscles was of such an extent. Cast animal on near side, and made an oblique incision about five inches in length and one and-a-half inches in depth, in line from the anterior spine of ilium downwards and forwards, opening up the upper part of the tract in incision. Next inserted silver wire sutures, as deeply as possible and very close together, and drew the lips of the wound in firm opposition. Used a large curved needle, similar to the one used on the human perinæum. This operation had the desired effect, and although of course the lower part of the fistulous tract is still in direct communication with the bowel at the time of writing, June 15th, the upper is completely obliterated, and the only thing to be seen of this exceedingly unpleasant and troublesome sequel of enterotomy is a slight scar which shows the line of the incision. I might also state that several medical men saw the case and were greatly interested; they advised pressure, the mild use of nitrate of silver as in the vesico-vaginal fistula of woman, both of which modes of treatment I forgot to say I gave a thorough trial, but they proved of not the slightest avail. Rectal alimentation for several days to give the tract a better chance to heal, by withdrawing the source of irritation, the chyle, suggested itself to me; and if my incision failed in its object, I would have laid it open afresh, and

tried that method. I conceive that a circumscribed peritonitis was set up from one of the punctures, that the bowel became adherent to the abdominal muscles, and that an abscess in those muscles, as the result of the tapping, implicated the coats of the bowel and resulted in its persection. Some of my readers may think that I might have slit it up in the first place and saved all the trouble; so I might, and I would do it now, but then I had no data to work on. Perhaps the recounting of my experiences may save some young practitioner who meets with a similar case from spending much valuable time in modes of treatment which are of no avail in this particular trouble. The conclusions I may fairly arrive at are these:

That fistula of the colon or other bowels may be a sequel of enterotomy in the horse.

That scraping of the walls of the fistulous tract, followed by the use of the firing iron and blistering, the mild application of nitrate of silver, use of pressure by pads and surcingle, painting with flexible collodion, and application of adhesive plasters, are of very little avail in the treatment of this sequel.

That where the fistulous tract communicates directly with the bowel, we are justified in resolving merely the upper part of that tract into an incised wound, and that by securing firm opposition of the lips of the wound we may almost always confidently look forward to a complete obliteration of that portion; thus being practically a cure.

That such cases under treatment should be tied up short and prevented from rubbing the flank or catching tail on sutures; diet should be small in quantity and exclusively grain, and the water restricted.

In cases where this plan of treatment fails in closing up the external opening, rectal alimentation together with similar incision and sutures may accomplish a cure.

I trust my readers will pardon this somewhat long, and perhaps to some, uninteresting article. All practitioners are baffled at times, at least I have yet to see the man who is always equal to the occasion; and so I feel no diffidence about placing my treatment in this case under your scrutiny. I have always held

the opinion that the history of failures is often of even greater service to especially our young practitioners than the triumphant recording of success, with all the failures kept carefully in the background. There is no reason that any one of us should keep these things to himself to escape criticism; they are the property of the profession. Let us have some of the sour as well as the sweet.

EDITORIAL.

THE "REVIEW" PROGRAMME.

In accordance with the original programme accompanying the first issue of our journal, and in order to lay before the veterinarians of our country the record of whatever is valuable and interesting in the progress of the medical sciences, and more especially of such matters as are included in our own department of curative art, we have for several months past given a liberal portion of our space to the reports of the various experiments to which Mr. Pasteur and his assistants have devoted their laboratory, besides giving, on many occasions, translations of the records of the numerous interesting discoveries of Messrs. Chauveau, Toussaint and other investigators, not forgetting those of our American *confrere*, Dr. Salmon.

It is thus that we have kept our friends informed in reference to the theories and facts of prophylaxy as inauguated by European practitioners, and applied to the contagious disease of animals, with the magnificent results which have been attained, and the incalculable advantages which have followed, not only to the interests of agriculture, but the higher interests of humanity.

We trust that our endeavors have not been in vain, and though it would be premature to look at present, for the application of the various modes of inoculation in this country, as they have been realized in Europe, we cannot but feel persuaded that at least those of our veterinarians who have kept themselves advised through the publications in question, must derive much personal advantage, in various instances, from their advanced know-

ledge and more enlightened judgment in the course of their professional labors.

Fully satisfied of the importance which attaches to the wide dissemination of a knowledge of these discoveries, we shall continue to pursue the same course in the future, being quite assured that every veterinarian, equally with every physician, entitled to the designation of sanitarian, will fully appreciate the value and wisely avail himself of the benefits of the information placed at his disposal in the columns of the REVIEW.

M. PASTEUR'S RECENT DISCOVERIES.

"At this very moment experiments [upon the prevention of hydrophobia] are under full headway. Biting dogs and bitten dogs fill the laboratory. Without reckoning the hundreds of dogs which within three years have died mad in the laboratory, there is not a case discovered in Paris of which Pasteur is not notified. 'A poodle and a bull-dog [*bouledogue*] in the height of an attack; come!' was a telegram sent to him recently. Pasteur went. The two dogs were rabid '*au dernier point*,' and it was only after some time and no small trouble that they were bound securely to a table. M. Pasteur then bent over the frothing head of the bull-dog, and sucked into a pipette a few drops of saliva. Our author remarks, in conclusion, that Pasteur never appeared to him so great as in the cellar where this took place, and while this '*tete-a-tete formidable*' was being enacted."

These few lines which we extract from the excellent book "Histoire d'un savant par un ignorant," tell more about the work which is being carried on by M. Pasteur, than any one could imagine. It is showing the constant danger to which this wonderful investigator, as well as his assistants, are exposed. But a short time it was the series of researches on anthrax, an affection whose name alone makes one think of certain death; later on it was glanders and now it is rabies. We publish in this issue one of the last communications on that subject, presented to the Academy of Sciences, as is customary for M. Pasteur to do when he desires to have the result of his experiments confirmed by authorities whose verdict is conclusive, wherein he asks for the appointment of a commission to witness and control some of his experiments relating to the prophylaxy and perhaps the curative treatment of hydrophobia. This was granted, the following eminent gentlemen being appointed: Dr. Béclard, Permanent Secretary of

the Academy of Medicine, Professor of Physiology and Dean of the Paris faculty of Medicine; Mr. Paul Bert, Member of the Institute, Professor of General Physiology at the Faculty of Sciences of Paris; Mr. H. Bouley, Member of the Institute and of the Academy of Medicine, Professor of Comparative Pathology at the Museum of Natural History; Dr. Villemin, Member of the Academy of Medicine, Professor of Clinical Medicine at the Military School of Medicine and Pharmacy of Paris; Dr. Vulpeau, Member of the Institute and of the Academy of Medicine, Professor of Comparative and Experimental Pathology at the Faculty of Medicine of Paris; Mr. Tisserand, Director of the University of Agriculture.

What the results may be is difficult to say; but no doubt all who claim an interest in sanitary science at least will watch them with anxiety. If Mr. Pasteur can render dogs refractory to any inoculation of rabid virus, what a giant step forward will it be in the history of the prophylaxy of the disease! If Mr. Pasteur can prove the prevention of the appearance of the disease as results from the bite of a mad dog through a series of inoculations, the grand problem of its curability will no more be a doubt, and the world at large will recognize the grandeur of the great French chemist. Then probably we will never read any more opinions like those which were expressed lately by a member of the Royal College of Veterinary Surgeons, and also by one of the officers of the State Board of Health, who had the shameful courage to treat the announcement of the possible curability of rabies as *absurd* and all *gammon*.

SANITARY STATEMENTS AGAIN.

In our last issue we asked our readers to send us information from which we could form quite a reliable statement of the existence of contagious disease in the various parts of the country; and to assist our friends in sending the desired information we had placed in the REVIEW a printed table which could be filled in a short time and would be of great use to us, having a space left for suggestions and remarks as to the project in view. Since the call

has been made we have received a number of responses, and among them one from Winnipeg, Manitoba, where Mr. A. Bund, V.S., not only kindly promises to send the statement for each trimester, but also forwarded the regulations of the Veterinary Sanitary Service, an excellent pamphlet where all duties of the veterinarian are well laid out. And while we here offer our thanks to those who have returned the tables well filled, we would once more call upon those who have not done so and remind them that our professional value and interests are sought to be promoted by this work, besides the importance that the publication of such documents may have in obtaining better laws for the regulation of veterinary sanitary medicine in the United States.

VETERINARY INSPECTORS.

In our April issue we acknowledged the receipt of the new regulations for admission to the civil service of the Department of Health of the City of Brooklyn, under which none but regular graduates of veterinary medicine could be appointed to positions in said department. To-day we can announce that the first examinations of candidates for appointment as assistant inspector has taken place before a board consisting of R. M. Wyckoff, M.D., W. E. Griffiths, M.D., J. Corbin, M.D., L. N. Fisk, M.D., and A. Liautard, M.D., V.S., in a written, oral and practical examination. Four candidates presented themselves at the competition, and Drs. R. McLean and W. H. Hornblower received the appointment.

REGISTER OF GRADUATES OF VETERINARY MEDICINE.

Alumni of the Montreal Veterinary College.

Continuing the list of regular members of the profession which we inaugurated in our last issue, we give to-day the list of the alumni of the Montreal Veterinary College, kindly sent to us by the Principal, Dr. D. McEachran. As soon as those of other institutions shall have been secured, we will present them to our friends, as also those that may be sent us of European graduates.

In this list the graduates that are practicing in the United States, so far as we know, are given in italics:

Alloway, C. J.	Montreal	1869
Audrain, H	do	1879
Ball, E. P	Stanstead	1884
Baker, M. C	Montreal	1879
*Baker, Austin**	Chicago, Ill., U.S.	1876
Bancroft, C. D	Knowlton, P.Q.	1884
Bell, Wm	Kars, Ont.	1882
Bergeron, L. H	Bord-á-Plouffe, P.Q.	1881
Bergevin, Hector	St. Timothé, P.Q.	1879
Bisaillon, Hilaire	St. Valentin, P.Q.	1881
Blackwood, Thos	Boston, Mass., U.S.	1876
Brodie, Jas	Bloomington, Ill., U.S.	1883
Brown, D. S	Roscoe, Ill., U.S.	1877
Brown, M. S	Montreal	1880
Bruneau, O.	do	1872
Bryden, Williamson	Boston, Mass., U.S.	1871
Campbell, D. E. P	St. Hilaire, P.Q.	1882
*Carter, E. J**	Pittsburgh, Pa., U.S.	1881
Chandler, A. J	Montreal	1882
Clément, A. W.	Lawrence, Mass., U.S.	1883
Couture, J. A.	Quebec	1873
Cressy, Noah, M. D. Phd	Amherst, Mass., U.S.	1878
Cross, A. E.	River Beaudette	1884
Crevier, E. C.	Peterboro, Ont.	1883
Crundall, E	Geneva, N.Y., U. S.	1884
Chevalier, J. B.	Montreal	1873
Cummins, P	Quebec	1880
Daubigny, V. T.	Lachenaie, P.Q.	1879
Drouin, C	Montreal,	1884
*Duncan, J. A**	Boston, Mass., U.S.	1876
Farley, O. C	Duncanville, Ont.	1884
Ferries, James	Beaverley, Ont.	1869
Fogg, J. C.	Boston, Mass., U.S.	1876
Fraser, J.	Yorkshire, England	1869
Gadbois, O.	Terrebonne, P.Q.	1882
Glass, Alex.	Philadelphia, Pa., U.S.	1882
Hall, W. B.	Quebec	1877
Harris, A. W.	Ottawa, Ont.	1880
Hébert, Serville	St. John, P.Q.	1877
Henry, J.	Fall River, Mass., U. S.	
Hinkley, N. P.	Buffalo, N.Y., U. S.	1880
Jakeman, William	Halifax, N.S.	1880
Labelle, P. F.	Ste. Dorothée, P.Q.	1882
Labelle, Jos.	Ste. Rose	1884

* Medallist. † Deceased.

Levesque, Chas.	Berthier (Upper)	1871
Levesque, Alphonse	Montreal	1879
Lemay, D.	Baltimore, Md., U.S.	1879
Lyford, Chas. C., M.D., B.S.	Minneapolis, Minn., U.S.	1877
Maisonneuve, O.	Terrebonne, P.Q.	1882
Mears, A. W.	Chicago, Ill., U.S.	1884
Milloy, John	Boston, Mass., U.S.	1877
Murphy, William A†	Cambridge, Mass., U.S.	1877
Miles, I. J.	Charleston, Ill., U.S.	1879
Morin, C*	St. Albans, Vt., U. S.	1884
MacCormack, A.	Ormstown, P.Q.	1873
MacLaughlin, James	West Newton, Mass., U.S.	1877
McEachran, Wm, M.D.C.M*	Winnepeg, Man.	1880
McEachran, Chas.	Montreal	1884
McLennan, F. W.	Bridgeport, Conn., U.S.	1878
McMartin, H. J.	Potsdam, N.Y., U.S.	1879
O'Connell, T. J.	Salem, Mass., U.S.	1883
Ormond, Chas. H.	Milwaukee, Wis., U.S.	1881
Pagé, Joseph	Lotbinière, P.Q.	1880
Patterson, Wm., M.R.C.V.S.	Montreal	1869
Paquin, Fred.	St. Andrews, P.Q.	1883
Paquin, Paul.	Jackson, Mich., U. S.	1883
Pomeroy, B. A.	Compton, P.Q.	1883
Price, Richard	St. Paul, Minn., U.S.	1881
Pierce, Benj. D.	Springfield, Mass., U.S.	1881
Privé, P., M.D.	Terrebonne, P.Q.	1873
Prévost, Vital.	Sherbrooke, P.Q.	1876
Robins, W. P.	Hochelaga, P.Q.	1883
Robinson, C. B.	Wheeling, West Virginia, U.S.	1882
Ryan, John	Chicago, Ill., U.S.	1877
Skally, J. M.	Boston, Mass., U.S.	1882
Thomas, F.S., M.D.	Hanson, Mass., U.S.	1879
Torrance, Fred., B.A.	Brandon, Man.	1882
Trudel, N. Albert.	Three Rivers, P.Q.	1881
Wardle, Walter.	Montreal	1882
Winslow, Charles	Rockland, Mass., U.S.	1879
Williams, W. L.	Bloomington, Ill., U.S.	1879

EXPERIMENTAL PATHOLOGY.

ATTENUATION OF VIRUS OF RABIES.

Paper presented by Messrs. Pasteur, Chamberland and Roux.

The great fact of the varying powers of some viruses, and the preservation of the virulency by another of less power, is to-day

* Medallist. † Deceased.

not only accepted by science, but even admitted in practice. With such a direction for our investigations we can appreciate all the interest attached to the researches into the methods of attenuation applied to new viruses.

On this occasion I report a step of progress in that direction in relation to rabies.

1. If we pass from the dog to the monkey, and again from monkey to monkey, we may observe that the virulency of the rabid virus diminished as it passed to each animal successively. When the virulency has been diminished by successive transmissions from monkey to monkey, if the virus is again carried back to the dog, the rabbit or the guinea pig, it still remains attenuated. In other words, the virulency does not return at once to that of the dog with *street rabies.*

In these conditions the attenuation may be easily brought by a small number of passages from one monkey to another to such a point that it cannot communicate rabies to the dog by hypodermic injection. Inoculation by trephining, so positively reliable for the development of rabies, cannot even produce the slightest result, though it renders the animal refractory to the disease.

2. The virulency of rabies virus increases when passing from rabbit to rabbit, or from one guinea pig to another. When the virulency is increased and fixed at its maximum in the rabbit, it passes with its increased power to the dog, and shows itself there stronger than that of the dog affected with *street rabies.* This virulency is such in those conditions that the virus which possesses it when inoculated into the circulatory system of the dog gives him with certainty a fatal rabies.

3. Though the rabid virulency in the passage from rabbit to rabbit, or from one guinea pig to another, several passages are necessary through the bodies of those animals to enable it to recuperate its former condition of strongest virulency after it has been first diminished in the monkey. And again, the virulency of the dog with *street rabies,* which, as I have just remarked, is not at its maximum strength, requires when carried on the rabbit, several passages through individuals of that species, before reaching its maximum strength.

A practical application of the results I have just mentioned enables us easily to render dogs refractory to rabies. Indeed, we can easily understand how the person who experiments may have at his disposal rabid viruses attenuated to various degrees of strength; some not deadly, to protect the economy from the effects of more active viruses, and those from deadly viruses.

Let us take an example: The rabid virus of a rabbit, dead from trephining, after an incubative stage lasting several days beyond the shortest incubation in the rabbit, is taken. The incubative stage is generally of seven to eight days' duration after inoculation by trephining the most virulent virus. This virus of rabbit with a longer incubative stage, is inoculated (always by trephining) to a second rabbit, and the virus of this to a third. At each time, these viruses which become stronger and stronger, are inoculated to a dog. This animal is then able to resist a deadly virus and becomes entirely refractory to rabies, whether by intra-venous inoculation, or by trephining with the virus of a dog with *street rabies.*

By inoculation of the blood of rabid animals, in given circumstances, I have succeeded in considerably simplifying the operations of vaccination, and to give to the dog the most marked and refractory condition I will soon make known the whole of the requirements relating to this.

It would be of immense interest both now and until the far distant period of the extinction of rabies by vaccination, to be able to prevent the development of this affection after the bites of rabid dogs. On this point the first experiments I have made give me the greatest hopes of success. Thanks to the duration of the incubation of rabies after bites, I am justified in believing that we can certainly indue a subject with refractory power before the deadly affection makes its appearance as a consequence of the bite.

Though the first experiments are strongly in favor of this view, yet many more are required upon various species of animals before human therapeutics can reach the audacity of attempting the prophylaxy upon man.

It will easily be understood that notwithstanding the faith I

have acquired from the numerous experiments made during the past four years, it is not without apprehension that I publish today these facts, which show nothing else but a possible prophylaxy of rabies. If I had had at my disposal sufficient material means, I would have been happy to make this communication only after having asked from some of my confreres of the Academy of Sciences, and of the Academy of Medicine, to confirm the conclusions I have made known just now.

It is in obedience to these motives and to this hesitation that I have taken the liberty to write to Mr. Fallieres, the Secretary of Public Institutions, asking him to name a commission to whom I could submit my dogs refractory to rabies.

The master experiment that I would first attempt would consist in taking from my kennel 20 refractory dogs, which would be compared to 20 other dogs as witnesses. All these forty dogs would be made to be bitten by rabid dogs. If the facts I have mentioned are correct the 20 dogs considered by me as refractory would all resist, while the 20 witnesses would become rabid.

A second experiment not less conclusive would consist in taking 40 dogs, 20 vaccinated before the commission and 20 unvaccinated as witnesses. The 40 animals will be afterwards trephined with the virus of dogs with *street rabies*. The 20 vaccinated dogs will resist while the 20 others will all die of either paralytic or rabid hydrophobia.—*Revue Scientifique.*

AMERICAN VETERINARY COLLEGE.

HOSPITAL RECORDS.

SARCOMATOUS TUMOR OF THE MAXILLARY SPACE.

By F. S. Allen, B.S., D.V.S., House Surgeon.

The patient is a black gelding, about seven years old, the property of a Brooklyn physician. He was brought to the hospital on the second of May, for treatment for a tumor stated to be of about one year's growth; of small dimensions at first, but latterly increasing in size, until at the present time it has assumed very considerable proportions; the horse, however, being in other re-

spects in fine health. The tumor occupies the maxillary space, towards the anterior portion. It is of an elongated form, and nearly fills the entire space. It is not adherent to the bone, but is surrounded with infiltrated tissue, and somewhat movable. It is not painful, the animal making no resistance when it is examined. It does not seem to interfere with mastication, and examination by the mouth fails to reveal any interference with that cavity.

It is found by reference to the clinic book of the hospital that the horse had once before been brought for examination, but, as is shown by the history, was not subjected to treatment, the growth being then quite small and causing no inconvenience at that time.

On the 5th of May the patient was prepared for operation, an ounce of chloral-hydrate being administered, and he was cast on his left side. An incision was made on one side of the median line, but over nearly the middle of the growth, the entire length being about six inches, the skin being carefully dissected over the whole tumor, the cellular tissue being separated with the handle of the knife and the finger. The tumor was thus enucleated, though not without involving the division of some of the muscular fibres of the anterior appendix of the hyoid bone. The cavity was then filled with oakum, saturated with carbolic solution, the edges being approximated by trimming, and three sutures were applied to keep the parts in place.

The animal was then permitted to get on his feet, and was turned loose in a box stall. He was afterwards tied up, however, to prevent him from rubbing his head.

The next day the parts looked well. The oakum was removed, and a dressing of carbolic solution was prescribed and applied several times a day. On the 11th the granulations of the edges were cauterized with nitrate of silver and chloride of zinc, and from that date an ordinary dressing was kept on until the 14th, when he was discharged and returned to his work.

When removed the tumor weighed about eight ounces. It was somewhat irregular and lobulated in form, but seemed to be well defined on its outside surface. On section, it presented the

appearance of a lardaceous tumor, of a yellow-whitish color, with spots here and there much resembling a lymphatic gland. Examined by Dr. T. A. Steurer, lecturer on Surgical Pathology at the College, he reported it to be a small spindle-celled sarcoma, which, he said, probably originated from the lymphatic glands of that region.

Throughout the entire treatment the animal showed no reactive fever; his pulse and temperature remained normal, and his appetite was unimpaired.

HYPERTROPHY OF THE LYMPHATIC GLANDS OF THE INTER-MAXILLARY SPACE IN A STALLION.

By the Same.

This case is to a great extent a repetition of the one preceding. The subject was a black stallion, four years old. The growth was very similar to that of the previous case, though smaller. It had, also, numerous fistulous tracts, some of which seemed to run in the direction of the root of the third molar tooth. The growth, however, was hard, and there was an escape of pus through the fistulous tracts. It was not painful, and according to the report of the owner, had been present about three months. It had at various times been poulticed, blistered and tapped, but without producing any change. It was not very large, was elongated in shape, and seemed neither to grow nor diminish under any treatment.

On examination by the mouth, the third lower molar tooth of the right side was found to be very small and atrophied. It seemed diseased, and at first it was suspected that the two diseased processes might be connected, and that the removal of the tumor would have to be followed by the extraction of the tooth. This, however, did not prove to be the case, as when the tumor was removed no connection with the tooth could be discovered.

On the 14th of May, two days after admission, the animal being prepared and chloralized, was thrown, and the operation conducted in the same manner as in the first case: an incision upon the length of the tumor; dissection of the skin; isolation

and enucleation of the tumor, which was rendered difficult by the presence of numerous bands connecting it with the surrounding tissues. After the principal mass was removed, and a number of smaller tumors, hard and injected, had been carefully dissected out, and when the parts seemed to be entirely free from abnormal growths, the edges of the skin were brought together by stitches, and a dressing of iodo-phenol directed to be applied several times a day. This treatment was maintained, with slight variations, as required by external indications, until the 27th, when the horse was returned to his owner.

When removed, the tumor weighed four ounces. Microscopic examination showed it to have been originally lobulated, with hollows at intervals, and at points containing small abscesses. It proved to be a lymphatic gland in a hypertrophied condition, and undergoing an irregular process of degeneration.

This question may present itself, whether this would not also have proved to be a sarcomatous tumor if it had been left undisturbed, instead of being irritated and interfered with by the treatment to which it had been subjected.

REPORTS OF CASES.

LUXATION OF THE CARPO-METACARPEL ARTICULATION.

By C. H. Flynn, D.V.M.

On May 23rd I was hastily called to attend a two year old entire colt owned by a Mr. Scott. On arriving found the history of the case as follows:

The colt had been tied to a tree in the yard and left for the night. During the night a mare in heat broke from her pasture and got with him. When found in the morning he was down, tangled in his halter, his off fore limb flexed and much swollen in the carpal region.

Before I arrived attempts had been made to reduce the luxation but without success.

Upon examination I found the lesion to be in the carpo-metacarpel articulation. The metacarpal bones had slipped outward

till the articulating surface of the head of the outer splint bone could be distinctly felt, also the lower surfaces of the magnum and trapejoides.

Having determined the conditions present I clasped both hands around the joint, locked my fingers and pressed my palms forcibly on the laterel aspects of the joint. Immediately there was a snap and the animal extended the limb and took a few steps on it.

I now constructed a sling and placed him in it. We made him as comfortable as we could and I gave orders to keep the inflamed parts well irrigated with cold water.

The animal has been kept on cut grass, is out of the sling and is apparently all right, but we will not allow him to run at large till we are confident he is strong.

The colt is not of a loose conformation but has well knit joints and must have required a considerable force to have produced the lesion.

This case was of interest to me, never having known of a luxation in this region. Should like to know if they do occur often.

REVIEW.

LA NATURE VIVANTE DE LA CONTAGION. COUTAGIOSITÉ DE LA TUBERCULOSE.

By H. Bouley, Membre de L'institut.

This magnificent work may be denominated a continuation of a former work published two years ago by Mr. Bouley, as a resumé of his lectures on comparative pathology, delivered at the Museum of Natural History in Paris. This excellent work is composed in the elegant style which characterises all the writings of Mr. Bouley. It is divided into sixteen lectures, in which the author lays before his readers, not only the importance and the value of the results of experimental pathology, but principally and specially the true nature of contagion—*la nature vivante.* In the course of his interesting pages the author ably illustrates the steps by which the *epine irritante*, the

irritating cause, has now become thoroughly known and is still becoming familiar to us as the developing and growing microbe, as it presents itself under its various forms of micrococcus or bacillus, until it brings us down to the true nature of the contagiosity of tuberculosis, and shows the modes by which certain metastatic abscesses and other visceral lesions are the uniform and legitimate product of specific elements. The work is completed by an appendix introducing some interesting remarks upon the report of Messrs. Lydtin, Fleming and Van Hersten upon the same subject, with suggestions in reference to the treatment and prophylaxy of this disease.

Mr. Bouley is already too well known in the profession, and his voluminous writings justly appreciated by all French readers, medical as well as veterinary, both students and practitioners, to need further remark at our hands. In these lectures the learned gentleman has once more demonstrated to the world of savants the eminent justness of his claims to the distinguished honor recently conferred upon him in calling him to the Presidency of the Academie des Sciences of Paris.

DISEASES OF THE EAR.

By Prof. O. D. Pomeroy, M.D.

Even in this our day of constantly increasing English veterinary literature, the veterinary specialist, while finding pleasure and instruction in the study of the literature exclusively adapted to his own use, is often at a loss to know where to look for the information he desires, and is compelled by the absence of special treatises on various branches of veterinary medicine and surgery to fall back on the works of specialists in human medicine. Among these the above-named work will be found an eligible one for the use of the veterinarian. And while it is true that diseases of the ear are but seldom encountered in veterinary practice, he may still find among its contents a large amount of information of which he may find occasion to avail himself in the treatment of the lower classes of animals. We strongly recommend the work to those of our friends whose canine practice may bring before them patients suffering with diseases of the ear.

HEREDITY AND CONTAGION IN THE PROPAGATION OF TUBERCULOSIS, AND THE PREVENTION OF INJURIOUS EFFECTS FROM CONSUMPTION OF THE FLESH AND MILK OF TUBERCULOUS ANIMALS.

By A. LYDTIN, Carlsruhe, Veterinary Adviser to the Baden Government; G. FLEMING, LL.D., F.R.C.V.S., Principal Veterinary Surgeon to the British Army, and M. VAN HERSTEN, Veterinary Surgeon and Chief Inspector of the Brussels Abattoir.

The issue of this report will prove to the veterinary profession one of the most important of those recently published in relation to the disease named. It is a translation of the report presented to the Fourth International Veterinary Congress, held in September last at Brussels, and brings the entire history, with all the newly-discovered facts relating to tuberculosis, down to our own day. It is a valuable compend of the scientific knowledge of the disease, and shows on the part of the authors a great amount of difficult researches, of close observation and of personal experiments, all of which are made to contribute to the solution of the important problem of the prevention of the effects resulting from the conversion into food of the flesh and milk of tuberculous animals. As the question was not discussed at the last Congress, but was postponed to the next, the precautions which are recommended could not be definitely agreed upon. But it is nevertheless equally full of interest to the sanitary veterinarians now engaged in the duties of meat inspection.

The book is neatly printed, and makes a handy octavo of 175 pages. The report proper is supplemented by a short discussion of the subject, which occurred on the last day of the International Congress.

HORSES—THEIR FEED AND THEIR FEET.

By C. E. PAGE, M.D.

This volume claims to point out the true source of Malaria, Disease Waves, Influenza, Glanders, Pinkeye, etc. This title is certainly sufficiently suggestive and taking to tempt every one interested in the diseases referred to to buy and read the book; the more so, when he has the promise added of instruc-

tions *how to prevent and counteract them.* But great will be the disappointment suffered by the reader who masters the first hundred pages of the work. No doubt, there are some very interesting items of advice given, such as the observations on foul air in the stable and the improper feeding, all of which will probably pay the reader for the time he may devote to the book. The most serious and probably the most valuable point in the design of the author is to establish the fact that horses will do better on two meals a day than on three, and will do better on food proportionate to their work; and there are other equally judicious suggestions, connected with some sound and proper hygienic remarks. It is to be regretted that the author has not limited himself to these special points, and should not have found better reason for his new mode of feeding than to refer us to what he calls the veterinary practice of to-day, where he relates the history of a case most ignorantly treated by a person quite unworthy of the title which the author so generously gives him. The days of ignorance in veterinary medicine are gone by, and cases of laminitis are no longer treated by bleeding, inflating the shoulders, blistering the entire chest, purging, etc., etc. In the second part of the book, theories and facts in favor of the employment of unshod horses for all kinds of work are reprinted from the pen of Sir George Cox and Col. M. C. Weld.

SOCIETY MEETINGS.

NEW YORK STATE VETERINARY SOCIETY.

The regular montly meeting of the New York State Veterinary Society was held at the American Veterinary College on Tuesday, June 10th, 1884, at 8 p. m. The President, Dr. Liautard, in the chair.

Members present, were: Drs. Liautard, Robertson, Duane, Burden, Dixon, Burget, Bath, Charum, Allen, Pendry, Ryder and Kay.

On motion, minutes of the two previous meetings were read and adopted.

Dr. Robertson then favored the Society with a very interesting paper on

ELEPHANTIASIS OF THE WITHERS.

A roan horse 6 year old was admitted April 12th, 1884, with a previous history of a tumor appearing on the top of the withers. This dated some three months before admission. It had not, however, prevented the animal doing his usual work until about the 10th of the month. The swelling commenced in the region of the first dorsal vertebra, extended backwards to the eighth or ninth, and from the base of the scapula on the left side up to and over the median line; the tumor was well defined, movable fully six inches above the surrounding tissue; the skin upon the shoulder was thickened, full of wrinkles and partly denuded of hair; there was a feeling of fluctuation, and on the 13th of April, Dr. Burget punctured the swelling. There was difficulty in penetrating the skin on account of its thickness. About a quart of reddish fluid escaped through the trocar. The opening being enlarged, a small body, hard, white, the size of a bean, was washed from the interior, followed by others larger but of the same appearance. They were separate, capsulated, having the appearance of fibrous tissue; they numbered twenty, the largest measuring four inches in length, one and a half inches broad, and one inch thick. Besides these separate growths there was a collar of thickened connective tissue extending from the seventh dorsal vertebra on the left side to the first, then over the spinal column to the right side, then backwards to the seventh. It was fringed with growths, the inner edge was loose, smooth, the outer attached to the subcutaneous tissue. Attempts were made on different occasions to dissect this tissue from its attachments; large portions were removed but some remained on the right side. The parts after the fifth day became so swollen that surgical interference was necessary. The patient lost his appetite, temperature became above the normal, symptoms of septicæmia set in, which condition caused his death on April 23d.

During the progress of the case the question was frequently asked, What is the diagnosis? The condition was an unique one and we were at last compelled to call it a case of elephantiasis. In veterinary literature this name is applied to thickening of the

skin and subcutaneous connective tissue of the hind extremities, resulting as a rule from repeated attacks of lymphangitis and cellulitis. According to Robertson the skin becomes thickened, hardened and more difficut to move on the subcutaneous tissue; it is dry and coriaceous, occasionally scaly, and falls into folds and fissures, which, in cases of long standing, may chap and supperate. This thickening of dermal and subdermal parts after a time causes much alteration of the limb and deformity, with impaired power of motion. According to pathologists elephantiasis should be considered as a disease coming under the head of connective tissue tumor or fibroma. Coates, in his recent work, describes elephantiasis arabum as a localized thickening of the skin, beginning in attacks resembling erysiplas, at first passing of and then recurring. There is finally a permanent progressive and apparently unaccountable new formation of connective tissue, and so the characters of a tumor are assumed. The tissue produced is a loose succulent connective tissue like that of the skin, but containing more cells, and so more like inflammatory tissue. The epidermis is also thickened, so that the whole partakes of the character of an exaggerated hypertrophy of the skin. The new formation may extend inwards to the fascial, the intermuscular tissue, and even to the periosteum, inducing thickening of the bone. The disease is frequently regarded as taking place in the lymphatics. This view is supported by the fact that the new formed tissue is generally very succulent, as if the spaces were overfilled with lymph, and there are sometimes dilated lymphatics visible in the hypertrophied skin.

Virchow, in his " Pathologie des Tumeurs " says that several names have been proposed for the elephantiasis of the Arabs.

Fuchs called it pachydermia, but elephantiasis is far from a simple thickening of the skin ; it is an affection which extends much more deeply.

Mason Good employed the name of bucnemia.

Kampfer gave it that of hypersarcosis. Elephantiasis commences with inflammatory prodroma, which have generally the character of erysipelas; that is to say, they commence generally by an attack of fever, which extends rapidly beyond the primi-

tive point of appearance, accompanied by a slightly intense redness of the skin, with a deeper swelling hard œdematous of the parts. We explain this swelling in remembering that the lymphatic apparatus generally participates early in the diseased process. We see in the direction of the lymphatic vessels appear red streaks, hot, sensible, often hard. Lymphatic glands in the region where the disease is seated undergo an acute considerable tumefaction; if one cuts the swollen part, there escapes spontaneously or by a slight pressure a clear, yellowish liquid, which a little while after expression spontaneously coagulates. It is a liquid analogous to that we know as lymph, a fibrogenous liquid which does not coagulate, but remains liquid as long as it is enclosed in the interior parts, away from the contact with atmospheric air. We can explain in two ways how this substance accumulates in large quantities: at first it is produced in the tissues by the inflammatory process, it transforms a greater quantity of other material in fibringenetic substance; then that substance which in the normal condition should be withdrawn as an element of the lymph, remains in the parts, since all currents cease in the lymphatic vessels. This is explained by the swelling of the lymphatic glands produced by an increase of the cellular elements.

In the discussion that followed, and in answer to a question as to the formation of a line between lymphangitis, cellulitis and elephantiasis, said the two former were, as a rule, acute, and generally could be removed, which was not the case with the latter; yet admitted that it at times followed lymphangitis. Dr. Liautard agreed with this, and said he did not believe that true elephantiasis of the hind legs was so common as generally supposed.

After passing a vote of thanks to the essayist, the meeting went into executive session.

The Board of Censors reported in favor of the applications for membership of N. E. Cuff and L. James, V. S., who were duly elected.

On motion, meeting adjourned till second Tuesday in September, Dr. Charum being appointed essayist for the evening.

W. H. Pendry, *Sec.*

CORRESPONDENCE.

A CUT-AND-DRIED STATE ASSOCIATION.

To the Editor of the American Veterinary Review:

In my letter published in the June number of the REVIEW I gave the history of the course pursued by the *U. S. V. Journal* in forming the present State of Missouri Veterinary Medical Association. As a result of their action, Dr. Slattery, M.R.C.V.S., of this city, wrote to the editor of the *Journal* withdrawing his card from that paper. We feel justified in laying Mr. Daniels' answer to Dr. Slattery before the profession, and in commenting upon the same:

"DEAR SIR—Yours of the 9th to hand. We are sorry to have offended you. The call for a State convention was an invitation to you and your friends to be present. I never claimed to know qualified men, and it was your place to be there and look after the interests of your high calling.

"The error was one of the head, not heart.

"Hoping you may reconsider your request and leave your ad. in, I remain,

"Very truly, T. E. DANIELS."

To commence: Did the *U. S. V. J.* think that the regulars of St. Louis entertained so little an idea of the respect due to their profession as to gather at a convention in response to a call made by a number of ignorant quacks? By recognizing the validity of the call we would have reduced ourselves to their level, and therefore we held aloof. As to never knowing who the qualified men in St. Louis were, I beg leave to reiterate the statement in my first letter, that Dr. Slattery and myself expressly informed Mr. Smith on this point, which summarily disposes of this extenuation. We also differ with Mr. Daniels' authoritative statement that it was our place to be present and look after the interests of our high calling. To have the convention thrust upon us with such an array of signatures, after our unanimous expression of opinion that the time was not yet ripe for the formation of an association; to have that opinion set aside as of not the slightest consequence in comparison with the pecuniary inter-

ests of the *U. S. V. J.*, and then to tell us it was our place to be present and look after our interests—this is about the coolest thing we have heard of for some time. Mr. Daniels came down from Chicago to organize the association; why did he not call upon any of us and find out why Mr. Smith had failed in his mission? I will supply the answer, which the readers of the REVIEW have doubtless arrived at in their own minds ere now: Because the thing was cut and dried; the association had to be formed, graduates or no graduates; the *Journal* had to have more subscribers and more advertisers. The fruit of the "Missouri Mission" was to be seen in the last issue of the paper in question, in which my friend Slattery's card is hemmed in by a perfect horde of St. Louis quacks! So much for Mr. Daniels' explanatory letter.

Another point which should be carefully considered by the profession is the national legislation proposed by Dr. Plageman. Section 1 of the "Act to regulate the practice of veterinary medicine and surgery" runs as follows: "That no person shall be permitted to practice as a veterinary surgeon, either by prescribing for or treating any domestic animal for any disease, injury or ailment, or performing any operation, without having obtained a diploma from a college authorized to graduate students in veterinary medicine and surgery, *or is a recognized member of a State Association, or is a licentiate of same, and has passed a satisfactory examination before a board appointed for the purpose, and for which he shall hold a certificate or license.*"

The italics are mine.

Now, as to no man being allowed to practice for fees without being a graduate of a recognized school, that is very well and good, but the remainder of Section 1, in my eyes, constitutes a great danger to the profession, and virtually amounts to a usurpation of the diploma-giving prerogative of the schools, and the vesting of the same in a number of associations strongly tainted with the empirical element. Numbers will avail themselves of this back-door entrance to the profession, for they will reason that if a State association membership or license entitles them to legal recognition and can be obtained with comparatively little trouble, why go to college and be under the expense attendant on

a regular course? This part of the act, if passed, would be a dangerous weapon in the hands of our natural enemies, to be used unsparingly against us. Take the present State Association of Missouri, which is composed exclusively of quacks; what reliance could be placed on its members, or on such men as it pleased their whim to license? Not the slightest. The recognized veterinary colleges should have the *sole* power of granting diplomas. Any such division of power as is proposed by the act cannot but be prejudicial in the extreme to our interests. The sudden and fast increase of State Association licentiates, which would inevitably follow the passage of such an act—men who would be *legally* qualified, whose evidence would be as good as a graduate's in a court of law—should be looked at as a serious matter. I condemn the latter part of Section 1 as especially unjust in its bearings to the younger members of the profession, who, after pursuing an expensive course, will find themselves, when fully fledged, regarded by the public as on about the same footing as the licentiates. We may say that merit will always come to the front in time, but even deserving men have to struggle hard frequently to build up a practice, and they should not be handicapped by such unjust competition as we are likely to have. The rest of the proposed act will probably meet with the support of the body of the profession. We wonder who the Missouri representative (?) of the profession to the National V. M. Association meeting in Chicago next November will be?

Nothing I have written is from personal motives; it is merely the outcome of an honest and sincere desire to see the interests of the profession advanced as they should be, and I hope the stand I have taken on the present state of veterinary affairs in this country meets with the approval of my professional brethren.

H. F. James, V.S.,
St. Louis, Mo.

NOTICE.

We are pleased to call the attention of our readers to the advertisement of the Wilson Safety Manger as one of the best

means by which horses can be made to eat slow, and thus prevent the repeated attacks of indigestion to which greedy eaters are subject. We have had opportunity to try them, and have obtained excellent results from their use.

EXCHANGES, ETC., RECEIVED.

FOREIGN.—Gazette Medicale, Revue Scientifique, Revue d' Hygeine, Revue fur Thierheilkunde und Thierzucht, Annals de Belgique, Archives Veterinairs, Presse Veterinaire, Recueil de Medecine Veterinaire, Clinica Veterinaria, Veterinarian, Veterinary Journal, Revue Dosimetrique, Giornale di Anatomie Fisical and Pathological degli Animali, Schweizer-Archiv fur Thierheilkunde, Journal de Zootechnie.

HOME.—Scientific American, Live Stock Journal, American Agriculturist, Country Gentlemen, Breeders' Gazette, Spirit of the Times, Turf, Field and Farm, Medical Record, New York Medical Journal, Journal of Comparative Medicine and Surgery.

JOURNALS.—Maine Farmer, Farmer's Review, Journal of Agriculture, Ohio Farmer, Practical Farmer, Prairie Farmer, Western Rural, Amrican Farmer, &c., &c.

BOOKS AND PAMPHLETS.—A plea for the cure of Rupture, by J. H. Warren, A.M., M.D; Uber Wesen und Behandlung des Sogen Hufkrebses, by Prof. Dr. Putz of Halle; Uber Hufkrebs und Strahlfaule, by the same; Annual Report of the Board of Health of New Jersey; Proceedings of the second annual session of the Texas Live Stock Association; 43d Report of the New York State Agricultural Society; Report of the United States Treasury Cattle Commission for the year 1883; Constitution and Code of Ethics of the Massachusetts Veterinary Association; 12th Report of the Zoological Society of Philadelphia; Report of the Minister of Agriculture of Canada; 6th Annual Report of State Board of Health, Rhode Island.

COMMUNICATIONS.—H. F. James, T. S. Allen, C. H. Flynn, W. H. Pendry, E. F. Thayer, Acton Bund, C. H. Peabody, J. F. Winchester, W. A. Thomas, T. S. Very, A. J. Murray, R. Laidlaw.